

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-12 are currently being prosecuted. Claim 18 has been canceled. Claims 13-17 have previously been cancelled. Claims 1 and 6 have been amended. The Examiner is respectfully requested to reconsider his rejection in view of the amendments and remarks as set forth below.

Entry of Amendment

Applicants request that the present amendment be entered since it places the application in condition for allowance. Furthermore, entry of the amendment is considered proper since claim 18 has now been canceled which not only reduces the number of claims at issue, but also removes the rejection under 35 U.S.C. § 112.

Rejection under 35 U.S.C. § 112

Claim 18 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. This rejection is respectfully traversed. Since this claim has been canceled, this rejection is rendered moot.

Rejection under 35 U.S.C. § 102

Claim 1 stands rejected under 35 U.S.C. § 102, as being anticipated by Kinose (U.S. Patent 5,915,396). This rejection is respectfully traversed.

First, the Examiner refers to the Japanese reference 10-22358 as being the equivalent of this U.S. application. Applicants do not understand the application of this reference. The face of the patent indicates that the corresponding Japanese priority document is 8-170204. Furthermore, since the U.S. Patent has an issue date of June 29, 1999 which predates the priority date of December 11, 1999 of the present application, reliance on the Japanese reference should not be necessary.

The Examiner points out that the Kinose reference shows an ultraviolet cleaner and transportation robots to transport substrates to and from the ultraviolet cleaner. In answer to the previous arguments, the Examiner states that the limitations found in the preamble are not given patentable weight.

By way of the present amendment, Applicants have amended both independent claims 1 and 6 to better describe the present invention. First, the limitation of the etching has been removed from the preamble and added to the body of the claim. Further, the ultraviolet cleaner has now been described in more complete terms as cleaning the alien substance remaining on the substrate after

developing the mask pattern. The conveyer is also now described as a conveyer for in-line conveying. Also, it is described as conveying the substrate to and from the ultraviolet cleaner for wet etching.

The Kinose reference does not teach the cleaning of the alien substance on the substrate after developing the mask pattern. It also does not disclose in-line conveying to and from the ultraviolet cleaner. Accordingly, Applicants submit that this reference does not teach all the features of claim 1.

The present invention is further seen in FIG. 4 of the present application, as having an ultraviolet radiation unit installed in a chemical treatment apparatus which is used to clean a glass substrate with chemicals. The ultraviolet radiation unit dry-cleans the glass substrate after developing the mask pattern.

In view of the above, Applicants submit that claim 1 now defines over the Kinose reference.

Rejection under 35 U.S.C. § 103

Claims 2, 4-7, 9-12 and 18 stand rejected under 35 U.S.C. § 103, as being obvious over Kinose in view of the admitted prior art. This rejection is respectfully traversed.

First, since claim 18 has been canceled, this part of the rejection is rendered moot.

The Examiner points out that the Kinose reference does not describe an apparatus having both an ultraviolet cleaner and a wet etching unit. The Examiner relies on the admitted prior art to show that the use of both units in a single apparatus would be obvious.

Claim 6 describes a wet etching apparatus having a combination of elements, including an ultraviolet cleaner for cleaning the alien substances from the substrate after developing the mask pattern, a conveyer for conveying the substrate to and from the ultraviolet cleaner and an etching unit. Applicants submit that this combination of elements is not seen by the Kinose reference even in view of the admitted prior art.

First, it is pointed out that claim 6 now describes the ultraviolet cleaner as cleaning the alien substance after developing the mask pattern. This is not seen in the Kinose reference. In the present invention, this cleaning occurs after developing the mask pattern but before the wet etching. Such a concept is not seen in either the admitted prior art or the reference. Further, claim 6 also describes a conveyer for moving the substrate to and from the ultraviolet cleaner. While the reference shows a robot, it does not show a conveyer for performing this function. Further, the conveyer conveys the substrate from the cleaner into the etching unit, which is not seen in the

reference. Instead, two separate robots are utilized for movement of the substrates. In view of this, Applicants submit that claim 6 defines over the combination of the Kinose reference and the admitted prior art.

Claims 2-5 and 7-12 are dependent claims which depend from these allowable independent claims. Accordingly, these claims are allowable based on their dependency. Further, each of these claims have other features not seen in the references. For example, claim 8 has been recognized by the Examiner as being allowable. Accordingly, these claims are also believed to be allowable.

The Examiner also rejected claim 3 as being obvious over Kinose and the admitted prior art further in view of Kizaki et al. This rejection is likewise respectfully traversed.

The Examiner cited the Kizaki et al. reference to show the use of an excimer ultraviolet light. However, even if this teaching is combined with the other two references, it still does overcome the deficiencies of the references listed above. Accordingly, this claim is believed to be additionally allowable.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination. In view of this, reconsideration

of the rejections and allowance of all the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse (Reg. No. 27,295) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.


Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Joseph A. Kolasch, #22,463

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

 JAK/RFG/mua/ags
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Attachment(s)